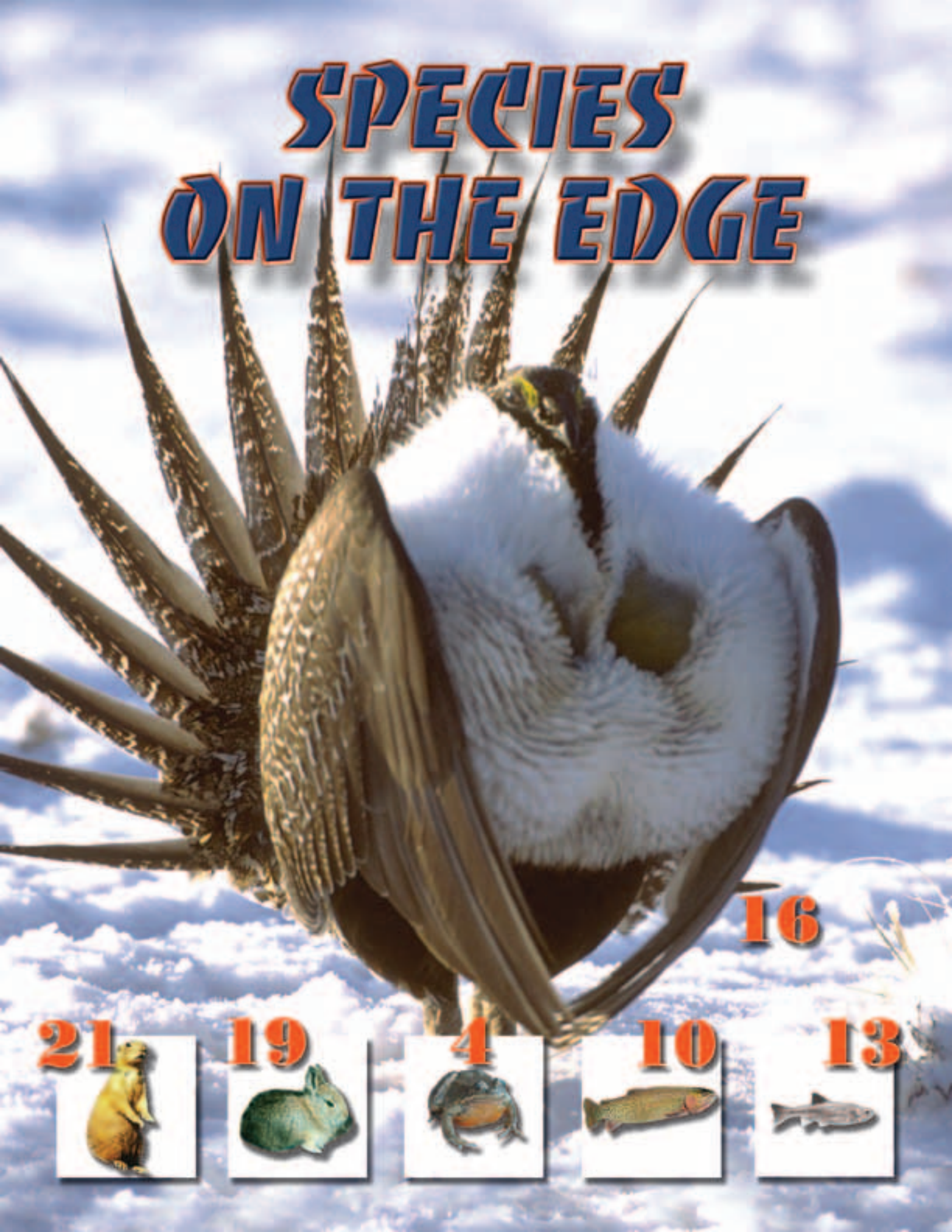
SPECIES ON THE EDGE



Species on the Edge —

May Impact Utah's Opportunity for Economic Sustainability

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STATE OF UTAH
NATURAL RESOURCES
Division of Wildlife Resources

Introduction

Within this report, *Species on the Edge May Impact Utah's Opportunity for Economic Sustainability*, a selection of nine species recently petitioned for listing under the Endangered Species Act (ESA) are highlighted. They are just some of the 80 species from Utah's 630 vertebrate wildlife species being assessed for consideration as State Sensitive Species as per Rule 657-48.

The nine highlighted species are at risk for various reasons, most of which are related to loss or degradation of habitat. If their populations continue to decline and they ultimately become protected under the Endangered Species Act, traditional land use practices such as livestock grazing, mineral extraction and water development may require evaluation and mitigation measures.

There is no question that species decline can be turned around by better understanding the needs of the animals and protecting, improving or expanding their habitats. If these "Species on the Edge" can be made to prosper, so will Utah's economy by minimizing or avoiding limitations upon land use practices. Species conservation also adds substantial aesthetic and recreational values to the lives of Utah's residents.

Two highlighted species, the Bonneville cutthroat trout and the Columbia spotted frog, demonstrate that focused conservation measures can be successful. Petitioners representing an array of environmental interests sought listing for both species under the ESA. However, ongoing conservation efforts in Utah allowed the U.S. Fish and Wildlife Service (USFWS) to culminate their assessment with a finding of "not warranted" regarding both petitions.

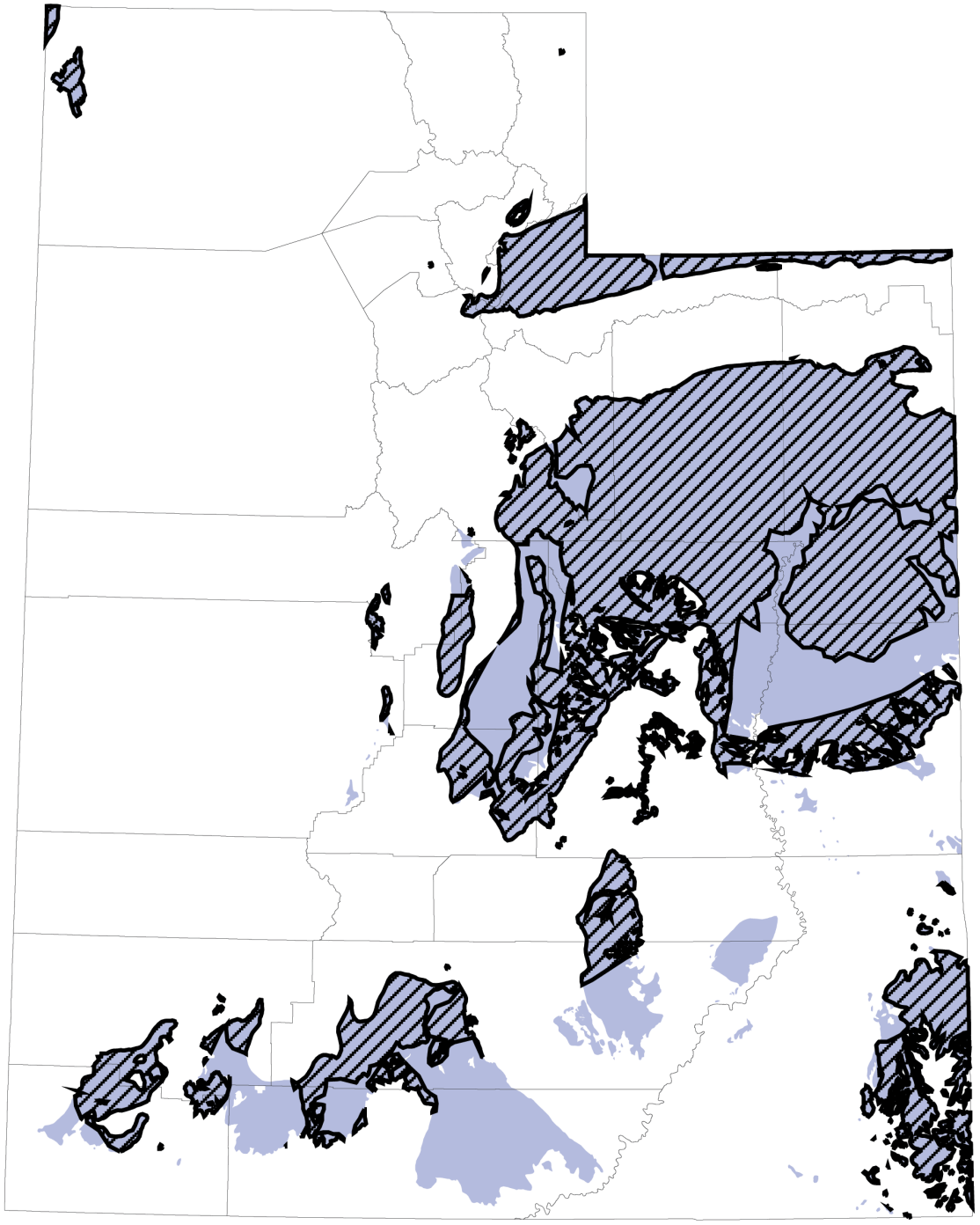
Conservationists have many tools from which to draw to improve the plight of a species, including but not limited to Conservation Agreements, Species Management Plans, Species Conservation Strategies and Memorandums of Understanding with government agencies or private entities. None of the aforementioned tools can result in significant accomplishment without economic and personnel resources to perform necessary conservation measures.

Elected officials at the state and federal level have recognized the importance of healthy ecosystems, which prevent the need for listing of species under the ESA. Developing and implementing effective conservation strategies in coordination with interested parties will create a continuing management and recovery approach, should a species eventually become listed.

Federal legislation creating the Landowner Incentive Program, the State Wildlife Grants Program, and significant increases in conservation funding within the Farm Bill has provided the resources necessary to manage species in need of conservation measures.

The Utah Legislature has provided funding in the form of the Department of Natural Resources' Endangered Species Mitigation Fund, which can serve as a match for federal funding. It is critical that these funding sources remain intact or increase, if the Utah Division of Wildlife Resources (UDWR) is going to be successful at preventing the ESA listing of the enclosed nine species.

Areas of Possible Conflict
Mineral Reserves and Potential ESA Species



Mineral Reserves - Oil, Gas, and Coal

Areas of Possible Conflict with Potential ESA Species

Columbia Spotted Frog

By Carmen L. Bailey, UDWR Native Aquatic Species Biologist

Species Description

The Columbia spotted frog (*Rana luteiventris*) is a medium sized, light to dark brown frog distinguished by its rough skin, dark dorsal spots, and yellow or salmon coloring on its underparts. Spotted frogs are highly aquatic, inhabiting marshy edges of lakes, ponds, springs, and slow moving, cool streams with organic substrate.

Habitat, Range and Population Status

Spotted frog populations in Utah represent the southern extent of the species range. The West Desert population occurs mainly in four large spring complexes. The Wasatch Front population occurs in isolated springs or riparian wetlands in Juab, Sanpete, Summit, Utah, Tooele and Wasatch counties. One new population, Vernon, was recently discovered in Tooele County while populations have been extirpated from the northern portions of the west desert. Columbia spotted frogs have been extirpated from the Salt Lake Valley and tributaries to the Jordan

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Endangered Species Act Status

The Columbia spotted frog was proposed for listing in 1989, under the ESA. In 1993, the USFWS determined that federal listing of Utah spotted frog populations was warranted; however, listing was precluded at that time. Based on protective actions and accomplishments in years following the implementation of the Spotted Frog Conservation Agreement and Strategy, the USFWS removed the Utah populations as candidates for listing in 1999, and determined that listing was not warranted for the Wasatch Front populations in 2002

Threats and Potential Impacts

Land-use and water development activities that contributed to the decline of this species on the Wasatch Front included urbanization, water development, agriculture and livestock grazing, all of which have been ongoing on the Wasatch Front since the mid-1800s. Historical habitat

loss and degradation has also resulted in the current isolation of extant populations. Equally challenging are indirect and cumulative effects of such impacts as sedimentation, water quality contamination from agriculture or pollution, and competition or predation by nonnative species.

Conservation Actions

Columbia spotted frog is classified as a Utah Sensitive Species due to declines in population sizes and distribution. The Spotted Frog Conservation Agreement and Strategy was developed in 1998 as a collaborative and cooperative effort among resource agencies to expedite the implementation of conservation actions for spotted frog. The goal of the strategy is to ensure the long-term viability of the spotted frog within its historical range through the collaboration of private landowners and natural resource agencies. This goal includes two primary objectives: 1) the reduction or elimination of threats to the spotted frog and its habitat making extinction of Utah populations unlikely; and 2) the long-term maintenance of spotted frog populations throughout its historical range in Utah. Recent declines of amphibians worldwide warrant the implementation of long-term monitoring and inventories. A vital component of the strategy is population monitoring in conjunction with habitat and population enhancement activities.

In 1998, the Utah Reclamation Mitigation and Conservation Commission and UDWR acquired a portion of the Mona spring complex and associated property near Utah Lake to protect three Utah Sensitive Species, including spotted frog, least chub (Iotichthys phlegethontis), and California floater (Anodonta californiensis). This acquisition protected these species from the rapid development occurring along the Wasatch Front. At the time of the acquisition, however, the Mona spring complex had already been severely degraded by livestock. In 2000, UDWR implemented habitat enhancement actions on the property to: 1) improve riparian

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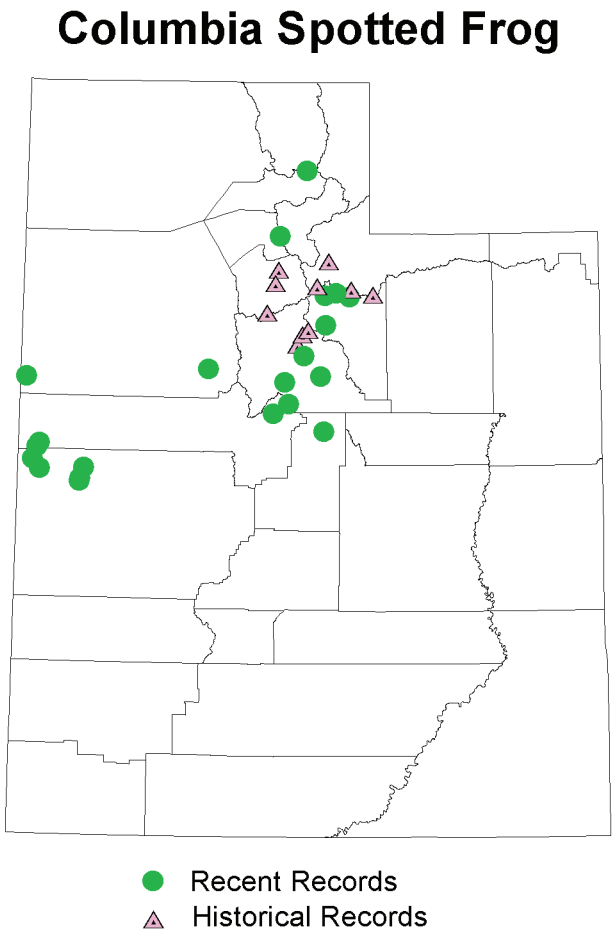

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River and Great Salt Lake due to habitat loss from urban development. Currently, there are seven localized populations of spotted frog that comprise the Wasatch Front population. The largest known concentration is currently in the Heber Valley.

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conditions; 2) slow spring succession; and 3) improve water quality.

In 1999, Utah Reclamation Mitigation and Conservation Commission created 22 new wetlands along the Provo River between Jordanelle Dam and Deer Creek Reservoir as part of their Provo River Restoration Project. These wetlands were constructed to provide and enhance spotted frog habitat and to mitigate for impacts that would occur in association with other Provo River Restoration Project actions. Many of these newly created wetlands are being used by spotted frogs for breeding as evidenced by the appearance of several egg masses in the spring of 2000. In 1998 and 1999, Utah Reclamation Mitigation and Conservation Commission acquired 203 acres that contain wetlands that are either occupied by spotted frog or that represent potential spotted frog habitat. The acquisition of these lands protects spotted frog habitat from development along the Provo River corridor.

Bonneville Cutthroat Trout

By Tom Pettengill, UDWR Sport Fish Program Coordinator

Species Description

Adult Bonneville cutthroat trout (*Oncorhynchus clarki utah*) vary in size from 0.5 to more than 10 pounds depending on habitat. Typically, lake-dwelling fish are larger than stream occupants. Bonneville cutthroat trout are generally covered with large, dark spots but the spotting pattern varies between populations. Typically they have the red or orange "cutthroat slash." Some populations have very noticeable orange fins. Spawning occurs from late April to June depending on the elevation. Adults bury their eggs in gravel in riffle areas of streams. The eggs hatch by late summer. Stream dwelling Bonneville cutthroat trout usually feed on aquatic insects while their larger, lake-dwelling cousin's switch to a diet of fish.

Habitat, Range and Population Status

Bonneville cutthroat trout are the only trout native to the Bonneville Basin. It is Utah's state fish. Anciently, Bonneville cutthroat trout occupied Lake Bonneville and

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Endangered Species Act Status

The USFWS was petitioned in 1979, 1992 and again in 1998 to list the Bonneville cutthroat trout as a threatened species under the ESA. In 1984 the USFWS determined the listing was "warranted but precluded" by other higher priority activities. The 1992 petition wasn't evaluated because the USFWS said it didn't present any new information. In December 1998 the USFWS ruled the new petition presented substantial information indicating listing might be warranted. In September 2001 the USFWS, after full review of the work of UDWR, other state and federal partners, issued a finding that 'listing was not warranted at this time.'

Threats and Potential Impacts

Habitat loss or modification, over harvest from fishing, disease, and stocking non-native species of fish are the major threats to Bonneville

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its tributary streams and headwater lakes. Bonneville cutthroat trout historically occurred in Utah, northeast Nevada, southeast Idaho, and southwest Wyoming. Utah Lake was full of Bonneville cutthroat trout when the pioneers first began to settle the area. Bonneville cutthroat trout inhabit streams and lakes at elevations between 4,000 – 11,000 feet.

Like most trout species they do the best in clean, cool, well-oxygenated waters. Good stream habitats have stable, well-vegetated banks and clean gravel substrate with few fine sediments in the substrate.

In 1978 there were only 6 documented populations of Bonneville cutthroat trout in Utah. By 1996, when the Utah Bonneville Cutthroat Trout Conservation Agreement was finalized, UDWR had documented 29 populations occupying 99 miles of stream.

As a result of increased UDWR survey efforts and work to expand populations, by 2001 there were conservatively 166 known populations in 630 stream miles. It's this dramatic increase in the number of populations and occupied streams miles that lead the USFWS to find that listing was not warranted in 2001. Continued vigilance and hard work will be needed to assure listing won't be warranted in the future.

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cutthroat trout. Habitat degradation from a variety of sources continues to be a major threat. Livestock grazing, road building, stream channelization and installation of dams and diversions have all greatly altered historical habitat of Bonneville cutthroat trout. Over harvest by anglers is no longer a real threat to the long-term persistence of Bonneville cutthroat trout. Over harvest can be a problem in localized areas. Disease is a growing concern with the spread of diseases like Whirling Disease but so far the UDWR hasn't seen any loss of populations due to disease. Stocking rainbow, brook and brown trout and non-native subspecies of cutthroat trout has impacted Bonneville cutthroat trout populations.

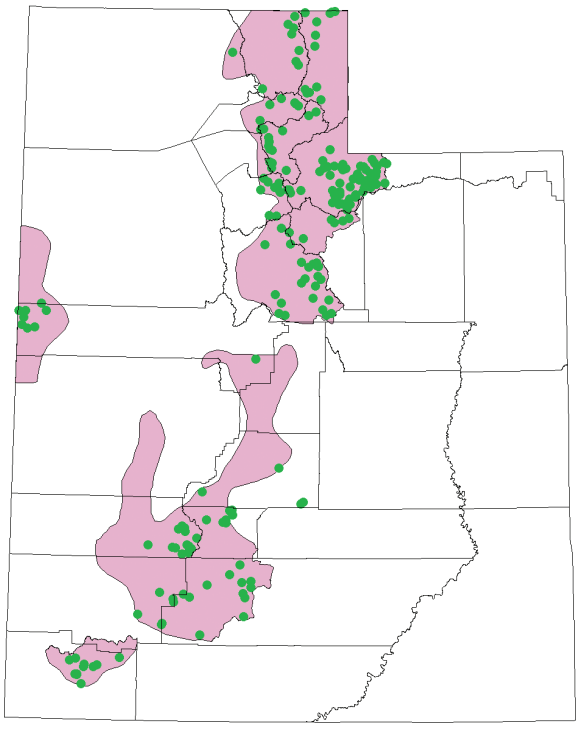
Presently, UDWR's aggressive native cutthroat trout management has prevented listing. Because they are not listed under ESA, local and county governments are willing to support native cutthroat trout population expansion. If they are listed most of the Bonneville Basin could be designated "Critical Habitat." Listing could affect sport fish management options.

Conservation Actions

The UDWR has been the leader in Bonneville cutthroat trout conservation. Utah developed the Utah Conservation Agreement in 1997 and the Rangewide Conservation Agreement in 2000. Utah chairs semiannual coordination meetings for these agreements. UDWR fisheries biologists have done much of the work that led the USFWS to decide listing of the Bonneville cutthroat trout wasn't warranted. Annually, approximately 25 percent of each regional sport fisheries program is devoted to native cutthroat trout management. Bonneville cutthroat trout from brood populations are being stocked into a number of sport fisheries to provide benefits to anglers. UDWR is also working with private landowners to protect and enhance habitat for native cutthroat trout.

Conservation work needs to continue. Some environmental groups fear that if the USFWS doesn't list a species that the UDWR won't preserve and protect the species. Considerable progress has been made in preserving and expanding Bonneville cutthroat trout from historic low populations of 30 – 40 years ago. The UDWR stives to complete surveys on streams and lakes that haven't been surveyed for years. Genetic analysis needs to be completed on many known populations, including new ones to be found as more field surveys are completed. UDWR has developed brood populations, but we need more. Disease monitoring must continue as required by law. Small isolated populations need to be expanded to secure those populations from isolated catastrophic events.

Bonneville Cutthroat Trout



Colorado River Cutthroat Trout

By Tom Pettengill, UDWR Sport Fish Program Coordinator

Species Description

Adult Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) typically vary from less than one pound to a few pounds depending on the habitat they occupy. Lake dwelling fish are generally larger than stream residents. Colorado River cutthroat trout generally have large, dark spots on the back half of their body but the spotting pattern varies between populations.

They commonly have the red or orange "cutthroat slash" under their chin. Some populations develop brilliant red coloration on their bellies and heads during spawning periods. These fish are definitely the most colorful of Utah's native trout. Spawning occurs from late April to June depending on the elevation. Adults bury their eggs in gravel in riffle areas of streams. Eggs hatch by late summer.

Habitat, Range and Population Status

Colorado River cutthroat trout are native to the Colorado River drainage in Utah, Colorado, Wyoming, New Mexico

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Endangered Species Act Status

The USFWS has been petitioned to list the Colorado River cutthroat trout under the ESA. The USFWS is expeced to have a draft finding on that petition soon.

Utah, Colorado and Wyoming all give the Colorado River cutthroat trout special recognition as a sensitive species. The U.S. Forest Service and BLM in Utah also recognize it as a sensitive species.

Threats and Potential Impacts

Habitat loss or modification, over harvest from fishing, disease, and introduction of non-native species of fish are the major threats to Colorado River cutthroat trout. Habitat degradation from a variety of sources continues to be an alarming threat. Livestock grazing, road building, stream channelization and installation of dams and diversions have greatly altered historical habitat.

Over harvest by anglers is no longer a real

threat to the long-term persistence of Colorado River cutthroat trout. Over-harvest can be a problem in localized areas but not for the population as a whole. Disease is a growing concern with the spread of diseases like Whirling Disease throughout the state. So far, UDWR hasn't seen any loss of populations due to disease. However, stocking rainbow, brook and brown trout and non-native subspecies of cutthroat trout has impacted Colorado River cutthroat trout populations.

Continued aggressive native cutthroat trout management will prevent listing. Because they are not presently listed under ESA, local and county governments are willing to support native cutthroat trout population expansion. If they are listed, most of the Colorado River drainage could be designated "Critical Habitat."

Listing could affect sport fish management options.

Conservation Actions

The UDWR has been a leader in Colorado

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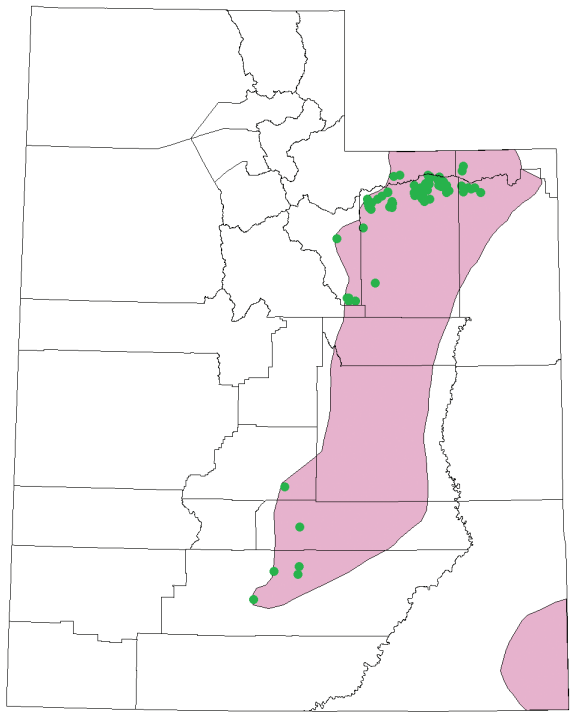
Colorado River Cutthroat Trout



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and Arizona. Colorado River cutthroat trout inhabit streams and lakes at elevations from approximately 5,000 to 11,000 feet in Utah.

Like most trout species they do the best in clean, cool, well-oxygenated waters. Good stream habitats have stable, well-vegetated banks, clean gravel substrate and few fine sediments in the substrate.

Work on Colorado River cutthroat trout has lagged slightly behind progress on Bonneville cutthroat trout but Utah DWR is poised to make great strides. In 1998, eight populations were documented inhabiting 36 miles of stream. By 2000, 35 populations were identified occupying 177 miles and in 2002 biologists had documented 56 populations in 272 miles of stream.

Ten lakes are currently being managed for conservation purposes. In 1998 there weren't any lakes with conservation populations. Brood populations have been established in two lakes. Fish produced from those two lakes are being used to stock waters on the Uinta and Boulder mountains. Colorado River cutthroat trout have been stocked in over 60 lakes in the Uinta Mountains to provide sport fishing. For the last few years Colorado River cutthroat trout eggs have been given to the Ute Indian Tribe to expand native cutthroat trout on the reservation.

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River cutthroat trout conservation. A Conservation Agreement was finalized for Utah in 1997. UDWR chairs the semiannual meetings of the Utah Colorado River Cutthroat Trout Conservation Team. Utah is also a signatory and active member in the Tri-state (Colorado, Utah, and Wyoming) Colorado River Cutthroat Trout Conservation Agreement.

Annually, approximately 25 percent of each regional sport fisheries program is devoted to native cutthroat trout management. When these two Conservation Agreements were first developed UDWR didn't know much about its Colorado River cutthroat trout populations.

Since the mid-1990s great progress has been made in identifying existing populations, developing brood populations for re-introduction and population expansion, and progress made in genetic analysis of populations to document pure populations of Colorado River cutthroat trout.

Conservation work needs to continue. Considerable progress has been made in preserving and expanding Colorado River cutthroat trout from the historic lows of 30 – 40 years ago. The UDWR must complete surveys on streams and lakes that haven't been surveyed for many years.

Genetic analysis needs to be completed on many known populations, including new ones to be found as more field surveys are completed. Genetic analysis is very important in determining what populations are pure so they can be used as sources for population expansion and brood source development.

Disease monitoring must continue on all brood sources as required by law. Small isolated populations need to be expanded to help secure those populations from isolated catastrophic events.

Least Chub

By Matthew Andersen, UDWR Native Aquatic Species Program Coordinator

Species Description

The least chub (*Iotichthys phlegethontis*) is a small fish in the minnow family (Cyprinidae), which may reach 76 mm (3 inches). They are pale olive on back and silvery on the sides. Unlike most fishes, least chub do not have a lateral line. They have relatively large eyes for their body size, which range from silvery to golden. The brightest males have a gold to reddish lateral band.

Habitat, Range and Population Status

Least chub originally occupied a wide variety of lake, river, and marsh habitats along the Wasatch Front, in the West Desert, in the Parowan and Beaver river drainages, and in the Bear River drainage, from where it was first described. Loss of populations of least chub appears closely associated with the loss of available aquatic habitats, especially along the Wasatch Front, where development has eliminated or reduced many free-flowing, freshwater habitats. Least chub

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Endangered Species Act Status

In 1982, the USFWS classified the least chub as a Category 2 Candidate species. In 1989, the USFWS reclassified least chub as a Category 1 Candidate. In 1995, the USFWS proposed to list the species as endangered with critical habitat. A multi-agency Conservation Agreement and Strategy was signed in 1998. Conservation actions taken as part of the Conservation Agreement have precluded the listing of the species as of July 2003.

Threats and Potential Impacts

The loss of aquatic habitats is the greatest single threat to this fish species. Competition and predation by non-native, introduced fish species also pose threats to the persistence of least chub. Where they naturally occur, in isolated spring pools, least chub are vulnerable to direct habitat degradation by livestock and to indirect habitat loss from groundwater withdrawals.

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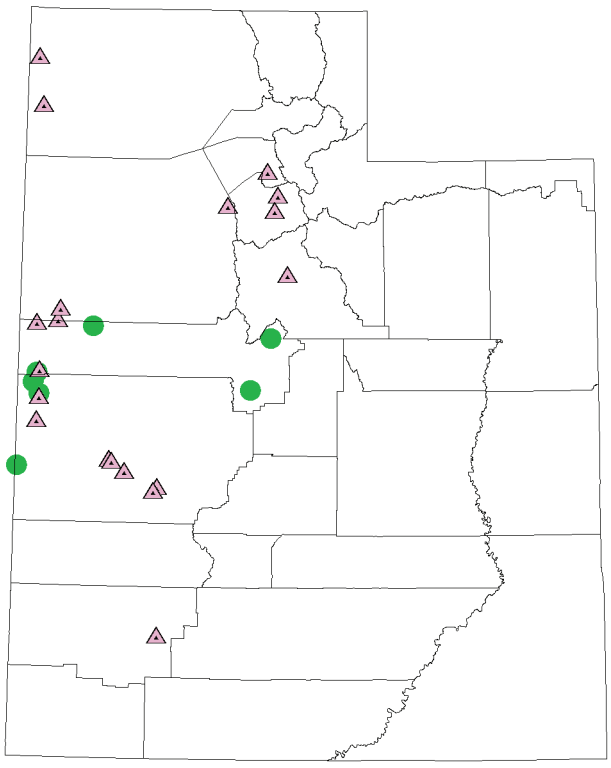
were collected near Wasatch Front urban areas as late as the 1960s. Currently, least chub populations occur naturally in a few isolated spring habitats south of Utah Lake, in the West Desert, and in the Beaver River drainage. Refuge populations have been established in the West Desert and at two UDWR hatcheries.

Least Chub



Recent Records

Historical Records

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Least chub in one location may be negatively impacted by a proposed peat mining operation, and at other locations, least chub populations are impacted by water management practices.

Conservation Actions

A Conservation Agreement and Strategy for Least Chub was signed by the UDWR and agency partners in April 1998. In order to protect the species and preclude the need for listing as an endangered species, these partners have agreed to determine the current population, life history, and habitat needs, to maintain genetic integrity of the species, to enhance, maintain and protect habitat, to selectively control non-native species, to expand populations, to monitor populations and habitat, and to develop mitigation protocols for water development.

Least chub currently occur in six isolated springs or spring complexes and two hatchery locations. They are found at springs in the Snake Valley along the border with Nevada, on the Fish Springs National Wildlife Refuge, in Box Elder County, and in Juab County.

In 1998, surveys by the UDWR located a population in Mills Valley in Juab County. A population also exists in Millard County.

Refuge populations have been established at the Fisheries Experiment Station in Logan and at the Wahweap State Fish Hatchery near Big Water. Refuge populations are currently breeding and expanding.

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Non-native fish species have had a detrimental impact on the least chub population in Juab County. The UDWR has been actively trapping and removing non-native fish from the county, and the non-native fish are now a smaller percentage of the total fish community than when the effort began three years ago, which appears to be helping the least chub population increase.

The UDWR has also expanded potential habitat by clearing out historic spring outflows. Least chub populations at other locations also seem to respond positively to the reduction of non-native populations, especially the reduction of mosquitofish populations. Least chub populations are variable at the other locations that have been monitored; reduced habitat as a result of human-caused and drought conditions has apparently reduced least chub populations.

The Conservation Team for least chub is active in monitoring known populations and in looking for populations that have gone unrecorded. Efforts are underway to determine if more populations exist in the Sevier and Beaver river drainages other than the Clear Lake population. The status of the Clear Lake population, recently identified, is being investigated. UDWR personnel are trying to identify funding in order to survey historic Bear River habitats in the hopes of finding additional least chub populations or habitats where additional populations could be introduced.

Protected and newly introduced populations of least chub will increase the likelihood that this species will persist and not require additional legal protection. The large-scale losses of this formerly wide-spread species indicate how vulnerable aquatic sources are in Utah, and how many of these habitats have been lost. The loss of aquatic habitats is of immediate threat to wildlife species that depend upon them, and, in the long-term, to humans who are also fundamentally dependent upon safe, available water.

Sage-grouse

By Dean Mitchell, UDWR Upland Game Program Coordinator

Species Description

Two species of sage-grouse are found in Utah. The Greater Sage-grouse (*Centrocercus urophasianus*) is found north and west of the Colorado River, while the Gunnison Sage-grouse (*Centrocercus minimus*) is found south and east of the Colorado River, mostly in San Juan County. Male Greater Sage-grouse weigh up to 7.2 pounds with females weighing up to 4.0 pounds. The Gunnison Sage-grouse male attains weights of only 5.0 pounds, while the Gunnison female weighs from 2.4 to 3.1 pounds. Annually during March through mid-May, sage-grouse exhibit a spectacular breeding display during which males congregate on traditional areas known as strutting grounds or leks. A dominant male bird called the "master cock" does most of the breeding of the females that are attracted to the leks.

Habitat, Range and Population Status

Sage-grouse in Utah occupy sagebrush habitats from 4,000-

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Endangered Species Act Status

Two petitions to list the Greater Sage-grouse in Utah as endangered under the ESA were submitted to the USFWS in June and July 2002. The USFWS has not initiated 90-day findings on either of the petitions because of "insufficient funds." The Gunnison Sage-grouse is listed as a "candidate" species under the ESA.

Threats and Potential Impacts

Outright losses, degradation and fragmentation of sagebrush habitats are suspected as the primary causes of sage-grouse population declines throughout Utah. Current research efforts underway in the Strawberry Valley area of Wasatch County have identified predation by non-native red foxes as a limiting factor in sage-grouse population growth in the area. A history of suppression of naturally occurring wildfires and resulting changes in rangeland fire intervals and intensity of wildfires, noxious weed

encroachment (cheatgrass), changes in domestic livestock and wild ungulate grazing schemes, and the construction of power lines, fences and oil and gas developments also contribute to declines in sage-grouse populations.

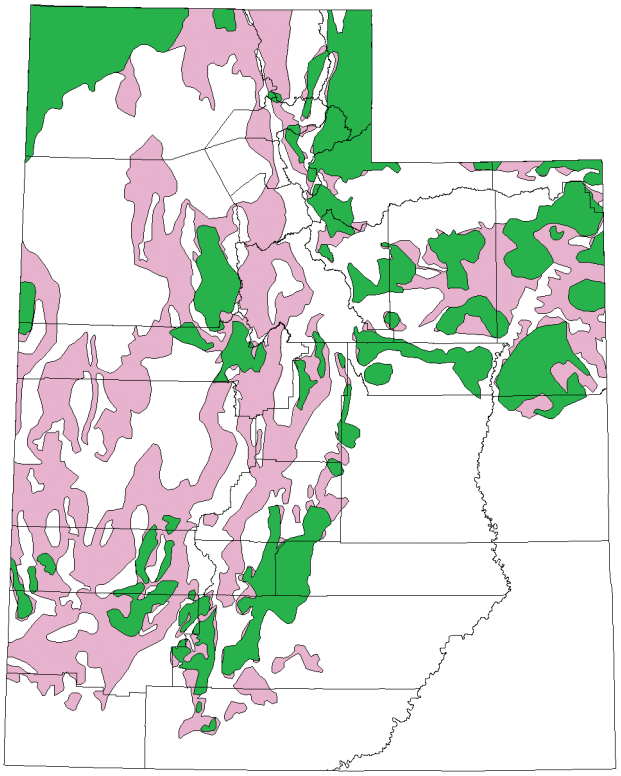
Conservation Actions

In June of 2002, the Utah Wildlife Board upon recommendation of UDWR's Regional Advisory Councils adopted a Strategic Management Plan for Sage-grouse. The plan identifies an array of statewide sage-grouse issues and concerns as well as strategies to be implemented for addressing issues and concerns. Within the plan, Utah is divided into 13 sage-grouse management units based on current distribution of birds. Sage-grouse conservation issues and concerns, as well as suggested strategies for addressing those issues and concerns, are identified for each of the 13 management units individually.

As part of the conservation planning process outlined in the strategic management plan, sage-grouse local working groups are to be established in each of the 13 management units. Local working groups are committees made up of local private citizens, farmers, ranchers, grazers and local grazing associations, local community leaders, county commissioners, local state senators and representatives, county extension agents, university personnel, conservation organizations, and state and federal natural resources management agency personnel. Sage-grouse local working groups are tasked with completing local sage-grouse conservation plans that not only meet the needs of sage-grouse, but also the economic, political and social needs of local communities. Most local working groups operate under the paradigm that, "What's good for the community is good for sage-grouse." In nearly all cases this is so true. If local communities can survive, grow and prosper, while at the same time keeping sage-grouse part of Utah's landscape, there are no losers in this complex natural resource management issue.

Photo by Ron Stewart

Greater Sage-Grouse



Current Distribution
Historical Distribution

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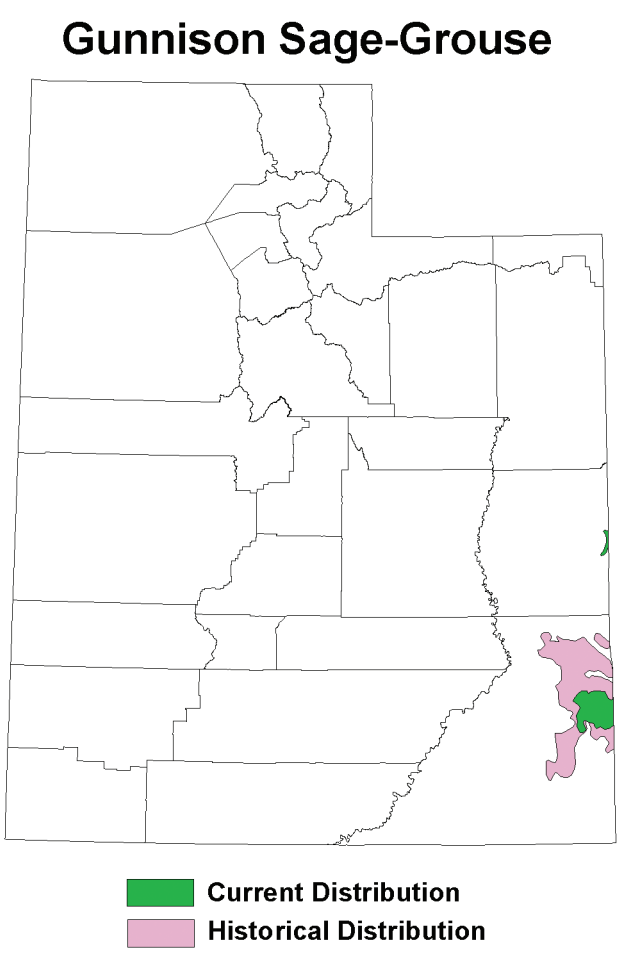
9,000 feet in elevation in the Colorado Plateau and Great Basin geographic regions. Based on historical accounts and observations, it's likely that sage-grouse originally occurred in portions of all of Utah's 29 counties where there was sufficient sagebrush and grass/forb habitats to support birds.

Present-day research suggests that sage-grouse were historically found throughout some 33.2 percent of Utah's landscape. The Greater Sage-grouse occupied 32.2 percent of Utah while the Gunnison Sage-grouse was found in 1.0 percent of the state. Today only 13.6 percent of Utah's landscape is inhabited by sage-grouse. The Greater Sage-grouse occupies 97.9 percent and Gunnison Sage-grouse 2.1 percent of this area.

The current distribution of sage-grouse represents just 40.9 percent of the historical distribution of sage-grouse in Utah. Thus, Greater and Gunnison Sage-grouse currently occupy 41.3 percent and 26.7 percent, respectively, of their potential historical distribution.

Sage-grouse are presently found in only 26 of Utah's 29 counties. They have been extirpated from Davis, Salt Lake and Washington counties. The estimated breeding population of sage-grouse in Utah is 13,000 - 15,000 birds.



Pygmy Rabbit

By Craig McLaughlin, UDWR Mammals Program Coordinator

Species Description

The pygmy rabbit (*Brachylagus idahoensis*) is Utah's smallest rabbit. Adult pygmy rabbits are often mistaken for juvenile cottontail rabbits, as they are similar in size (weighing only ½– 1 pound) and are similar in coloration. However, pygmy rabbits have brown tails in contrast to the white powder-puff tails of the cottontails. Pygmy rabbits have oval-shaped ears that are short in proportion to their head and whitish-buff along the edges. Unlike other rabbits and hares that hop, they tend to scamper. Pygmy rabbits are the only North American rabbits that dig their own burrows.

Habitat, Range and Population Status

Pygmy rabbits are almost totally dependent on mature sagebrush. The stands of tall sagebrush that provide them with food and cover are associated with deep, loose soils they need for digging burrows. Pygmy rabbits feed almost exclusively on sagebrush during the winter. In summer,

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Endangered Species Act Status

A petition for listing the pygmy rabbit under the ESA was submitted to the USFWS on April 1, 2003. The petition sites the rabbit's specialized habitat requirements, loss and degradation of habitat, inadequacy of existing regulatory mechanisms, and the impacts of disease and predation on suppressed populations as factors to warrant listing the pygmy rabbit. The pygmy rabbit is protected from harvest in Utah, and is a designated species-of-concern in Montana, Idaho, Wyoming, Nevada, and California.

Threats and Potential Impacts

Because of its dependence on mature sagebrush and deep soils, the pygmy rabbit is at great risk even compared to other sagebrush-dependent species. Their habitat is threatened by any large-scale removal of sagebrush through fire, conversion to agriculture, suburban encroachment,

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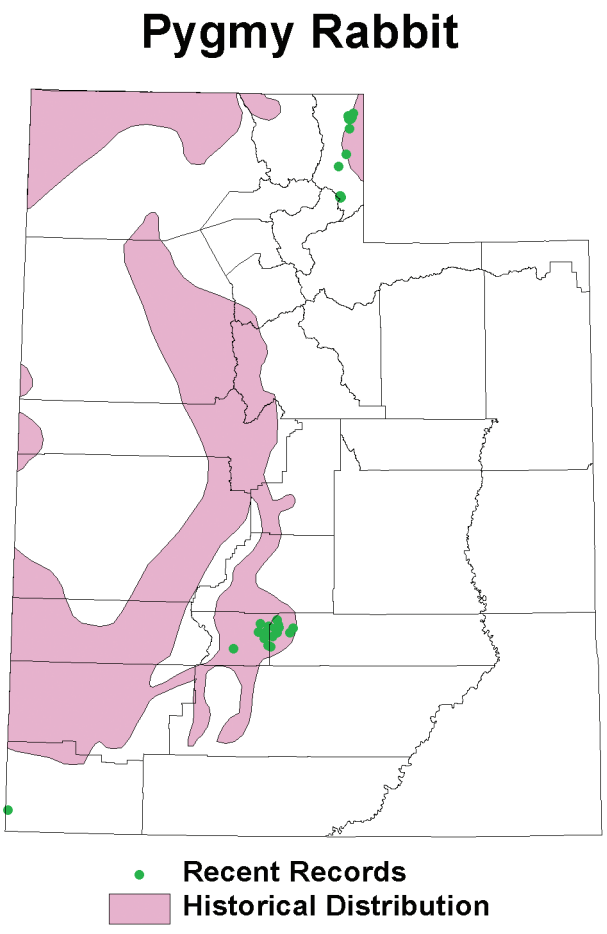
these small rabbits still eat primarily sagebrush, but their diet shifts to include more grasses and forbs. Because of the pygmy rabbit's unique habit of digging its own burrows, deep and loose soils are also an important factor defining pygmy rabbit habitat. Although they range throughout the Great Basin and occur in eight western states (Washington, Oregon, California, Idaho, Nevada, Montana, Utah, and Wyoming), pygmy rabbits occur in isolated patches. In Utah, pygmy rabbits are limited to the western half of the state with additional occurrences in Cache, Rich, and Wayne Counties. Significant changes have occurred in their habitat within Utah, with a corresponding loss in the distribution and number of rabbits.



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overgrazing or sagebrush "control" to increase grass production for livestock. Fragmentation of sagebrush stands has increasingly isolated individual populations, making them more vulnerable to a host of limiting factors, including predation. Preliminary surveys have found that pygmy rabbits remain in only a small proportion of their historical range in Utah. Similar trends of habitat change and range restriction occur in surrounding states.

Conservation Actions

The UDWR is surveying the sites of all historical occurrences of pygmy rabbits, and is visiting likely sagebrush habitat to document their current distribution in Utah, and to more fully characterize the vegetation and soils where pygmy rabbits exist. The pygmy rabbit has been highlighted as an important "focus" species in the UDWR's sagebrush-steppe habitat restoration programs on private, state and federal lands.

Therefore, range-improvement programs will include provisions to promote and retain mature sagebrush stands as pygmy rabbit habitat.

The UDWR is also sharing its knowledge of pygmy rabbit distribution and habitat characteristics with other private, state and federal conservation agencies, in a multi-state effort to meet the range-wide conservation needs of the species without invoking federal protection under the ESA.

Prairie Dog

By Craig McLaughlin, UDWR Mammals Program Coordinator

Species Description

Both white-tailed (*Cynomys leucurus*) and Gunnison's prairie dogs (*Cynomys gunnisoni*) look similar to ground squirrels, with more robust bodies, short legs, and small ears set close to their broad heads. Weighing about 11- ⅔ pounds, prairie dogs have yellowish pelage and short hairy tails.

In fact, these two species are often confused and are usually distinguished from each other by their tail coloration. The white-tailed prairie dog has a tail that is heavily tipped in white, and Gunnison's prairie dog has a tail with a black band and a marginal white tip. White-tailed prairie dogs live in relatively large, sparsely populated complexes. Gunnison's prairie dog colonies often contain higher concentrations of burrows and individuals.

Habitat, Range and Population Status

White-tailed prairie dogs inhabit mountain valleys, semi desert grasslands, agricultural areas, and open shrublands. Gunnison's prairie dogs live in grasslands, and semi desert

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Endangered Species Act Status

The USFWS was petitioned in 2002 to list white-tailed prairie dogs under the ESA. To determine the need for protection under ESA, the USFWS will rely heavily upon a multi-state conservation assessment that is currently being drafted. Environmental groups have indicated that they will petition the USFWS to list Gunnison's prairie dogs in the near future. These petitions are based upon concerns about unregulated threats to prairie dogs and their habitat.

Threats and Potential Impacts

Sylvatic plague (Yersinia pestis) is a devastating disease in prairie dogs. Plague originated in Asia, and was first discovered in white-tailed prairie dogs in the late 1930s. Prairie dogs appear to have little immunity to this disease, as outbreaks of plague frequently kill over 99 percent of prairie dogs in infected colonies. In the

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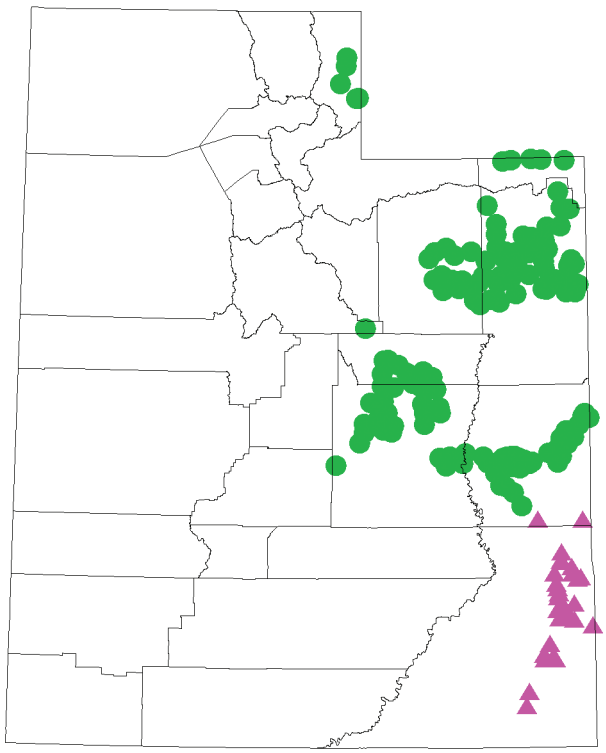
and high elevation meadows. Both species eat primarily grasses and sedges. White-tailed prairie dogs occur in Montana, Wyoming, Colorado and Utah. In Utah, their range encompasses the eastern part of the state, centered in the Uintah Basin and stretching southward to the Colorado River. Gunnison's prairie dogs occur in northern Arizona, southwestern Colorado, northwestern New Mexico and extreme southeastern Utah.

In Utah, Gunnison's prairie dog is only found south of the Colorado River in San Juan County and in Grand County. Both white-tailed and Gunnison's prairie dogs continue to occupy much of their pre-settlement range.

However, their populations have become highly fragmented into complexes of small, isolated colonies due to poisoning campaigns to remove them from agricultural areas, and from disease outbreaks. The large mega complexes that existed historically are gone, making remnant colonies more susceptible to loss from catastrophic events, such as die-offs from outbreaks of Sylvatic plague.

White-Tailed Prairie-Dog and Gunnison's Prairie-Dog



● White-Tailed Prairie-Dog Records
▲ Gunnison's Prairie-Dog Records

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last 20 years, plague is believed to be the primary reason that the acreage occupied by white-tailed prairie dogs in southeastern Utah's Cisco Desert has been reduced by 84 percent. Urbanization, conversion of habitat to agriculture, grazing and fire suppression also threatens prairie dogs by displacing them, and poison is still used to control prairie dogs on private lands. Recreational shooting alone has not been shown to reduce prairie dog numbers, but it has been implicated in population reductions in conjunction with outbreaks of Sylvatic plague.

Conservation Actions

UDWR has taken the lead role in developing multi-state conservation assessments for both white-tailed and Gunnison's prairie dogs. The UDWR began a comprehensive effort to map the current distribution of both species in 2002 and is developing methods to monitor prairie-dog abundance and population trends. UDWR biologists are also developing programs to monitor the effects of disease, recreational shooting and land use on prairie dogs. These state-driven conservation programs should provide sufficient safeguards for both species in Utah and should prevent the need for listing them under the ESA.